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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/812,880

03/31/2004

Kyoko Egashira

60188-827

4575

7590

08/02/2006

Jack Q. Lever, Jr.  
McDERMOTT, WILL & EMERY  
600 Thirteenth Street, N.W.  
Washington, DC 20005-3096

EXAMINER

NHU, DAVID

ART UNIT

PAPER NUMBER

2818

DATE MAILED: 08/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/812,880

Applicant(s)

EGASHIRA ET AL.

Examiner

David Nhu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 1-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

**FINAL**

**DETAILED ACTIONS**

**Claims Objection**

1. Claims 17, 19, The first conductive film is made of a metal film; the second conductive film is made of an aluminum alloy” are not described/supported in the specifications.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 12-19 are rejected under 35 U.S.C. 102 (b) as being anticipated by Lachner (6,893,935 B2), and Jung (6,555,428 B2).

Regarding claims 12, Lachner, (see figures 4a-4c, 5a-5c, col. 4, lines 7-67, col. 5, lines 1-15), teaches a semiconductor device comprising: an insulating layer 10; an interconnect 14 made of a first conductive film and a second conductive film that are stacked in sequence from the interconnect underside on the insulating film (see figures 4c, 5c); on the insulating film, a capacitor 1 composed of: a lower capacitor electrode 2 made of the first conductive film; a dielectric film 3 formed on the lower capacitor electrode; and an upper capacitor electrode 11 mad of the second conductive film, wherein each of the lower capacitor electrode, the dielectric film, and the upper capacitor electrode has a same pattern (see figures 5a-5c); and lower contacts 17, 18 are formed in the insulating film 10 on a bottom surface of the lower

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capacitor electrode, the lower contacts being connected to the lower capacitor electrode (see figure 5c).

Regarding claim 13, Lachner, (see figures 5d, 5e), teaches a lower insulating film 10 is formed beneath the insulating; a lower interconnect is formed on the lower insulating film; and the lower contacts are connected to the lower interconnect.

Regarding claim 14, Lachner, (see figure 5c), teaches a surface of the insulating film on which the capacitor is formed is formed is planarized.

Regarding claim 15, Lachner, (see figures 5d-5f), teaches an upper insulating film 5 is formed so as to cover the capacitor and the interconnect; and upper contacts 83, 85 are formed in the upper insulating film on the upper surface of the upper capacitor electrode, the upper contacts being connected to the upper capacitor electrode.

Regarding claim 16, Lachner, (see figures 5d-5f), teaches an upper interconnect is formed on the upper insulating film; and the upper contacts are connected with the upper interconnect.

Regarding claims 17-19, Lachner, (see col. 4, lines 32-47, col. 5, lines 10-16), also teaches the conductive films are made of metal nitride (TiN), Aluminum; the dielectric film is SiN.

### **Conclusion**

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Ono'239, Adan'131, Kirlin'213 are cited as of interest.

6. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned(see 710.02 (b)).

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7. Any inquiry concerning this communication on earlier communications from the examiner should be directed to David Nhu (571)272-1792. The examiner can normally be reached on Monday-Friday from 7:30 AM to 5:00 PM. The examiner's supervisor, David Nelms can be reached on (571)272-1787.

*The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.*

*Information regarding the status of an application may be obtained from the patent application information retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).*

David Nhu 

July 29, 2006

